

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A method of establishing a wireless communications link, the method comprising:

(a) discovering by a wireless communicating device (WCD) in an ad hoc network the existence of a remote device within a coverage area through a first short-range communications interface, the first short-range communications interface communicating through a first short-range communications link according to a first short-range communications protocol;

(b) (a)-determining through the first short-range communications link by a wireless communicating device (WCD) through a first short-range communications link of a first type whether the a-remote device is capable of supporting communications over a second short-range communications link through a second short-range communications interface, the second short-range communications interface operating according to a second short-range communications protocol; a short-range communications link of a second type and

(c) (b) exchanging information by the WCD with the remote device across the first communications link to establish the a-second short-range communications link between the WCD and the remote device if step (b) determines that the remote device is capable of supporting communications over the second short-range communications link; wherein the second short-range communications link is of the second type.

(d) activating the second short-range communications interface to establish the second short-range communications link with the remote device based on the information exchanged across the first short-range communications link, and

(e) controlling transmissions of the first and second communication links to operate in a scheduled manner.

2. (Previously Presented) The method of claim 1, further comprising directing the remote device to start communicating with the WCD after establishment of the second short-range wireless communications link.

3. (Original) The method of claim 2, wherein the first short-range communications link is a Bluetooth link and the second short-range communications link is an ultra wideband (UWB) link, said directing step comprising:

sending a Bluetooth link manager protocol (LMP) message to the remote device, the LMP message adapted to direct the remote device to begin accepting transmissions across the UWB link.

4. (Original) The method of claim 3, wherein the LMP message includes one or more UWB parameters.

5. (Previously Presented) The method of claim 1, further comprising communicating with the remote device by the WCD across the second short-range communications link.

6. (Original) The method of claim 1, wherein the first communications link is a Bluetooth link.

7. (Original) The method of claim 1, wherein the second communications link is an ultra wideband (UWB) link.

8. (Original) The method of claim 1, wherein the first communications link is a Bluetooth link and the second communications link is an ultra wideband (UWB) link.

9. (Original) The method of claim 8, wherein the UWB link employs a slot timing structure of the Bluetooth link.

10. (Original) The method of claim 1, further comprising establishing the first short-range communications link with the remote device.

11. (Original) The method of claim 10, wherein said first communications link is a Bluetooth link, said establishing step comprising:

performing a Bluetooth paging process with the remote device.

12. (Original) The method of claim 1, wherein step (b) comprises:

(1) sending a request to the remote device across the first communications link, the request inquiring whether the remote device desires to establish the second communications link; and

(2) receiving an acknowledgement from the remote device through the first communications link, the acknowledgement indicating that the remote device desires to establish the second communications link.

13. (Previously Presented) The method of claim 12, wherein the first short-range communications link is a Bluetooth link and the second short-range communications link is an ultra wideband (UWB) link, said step (1) comprising:

sending a Bluetooth link manager protocol (LMP) message over the first link to the remote device, the LMP message adapted to inquire whether the remote device desires to establish a second UWB link.

14. (Original) The method of claim 1, wherein the first short-range communications link is a Bluetooth link, step (b) comprising:

sending a Bluetooth link manager protocol (LMP) message to the remote device requesting packet type table including information identifying one or more supported links and packet types.

15. (Original) The method of claim 14, wherein the second short-range communications link is an ultra wideband (UWB) link

16. (Original) The method of claim 15, wherein the second short-range communications link is a high rate (HR) link.

17. (Currently Amended) A wireless communications device, comprising:
a first segment adapted to exchange information with a remote device across a first short-range wireless communications link of a first type in an ad hoc network;
a host coupled to the first segment, the host adapted to cause the first segment to exchange information with the remote device across the first communications link to set up a second short-range wireless communications link of a second type operating according to a second short-range communications protocol, in response of determining through the first short-range communications link that the remote device is capable of supporting a short-range communications link of the second type, the information including one or more parameters of the second short-range communications link; ~~and~~
a second segment adapted to exchange information with the remote device across the second communications link; and
link controllers controlling transmission of the first and second communication links to operate in a scheduled manner.

18. (Original) The wireless communications device of claim 17, wherein the first communications link is a Bluetooth link.

19. (Original) The wireless communications device of claim 17, wherein the second communications link is an ultra wideband (UWB) link.

20. (Previously Presented) The wireless communications device of claim 17, wherein the first communications link is a Bluetooth link and the second communications link is an ultra wideband (UWB) link, both links connecting the host to the remote device.

21. (Original) The wireless communications device of claim 20, wherein the UWB link employs a slot timing structure of the Bluetooth link.

22. (Original) The wireless communications device of claim 20, wherein the first segment includes a link manager adapted to exchange one or more Bluetooth link manager protocol (LMP) messages with the remote device.

23. (Currently Amended) A wireless communications device, comprising:
a first segment adapted to exchange information with a remote device across a first short-range wireless communications link of a first type;
a host coupled to the first segment, the host adapted to cause the first segment to exchange information with the remote device across the first communications link to set up a second short-range wireless communications link of a second type operating according to a second short-range communications protocol, in response of determining through the first short-range communications link that the remote device is capable of supporting a short-range communications link of the second type, the information including one or more parameters of the second short-range communications link; and

a second segment adapted to exchange information with the remote device across the second communications link;

wherein the first communications link is a Bluetooth link and the second communications link is an ultra wideband (UWB) link, both links connecting the host to the remote device;

wherein the first segment includes a link manager adapted to exchange one or more Bluetooth link manager protocol (LMP) messages with the remote device; and

~~The wireless communications device of claim 22,~~ wherein the one or more LMP messages includes an LMP message (LMP_switch_to_UWB_link_req) adapted to direct the remote device to begin accepting transmissions across the UWB link.

24. (Original) The wireless communications device of claim 23, wherein the LMP message includes one or more UWB parameters.

25. (Previously Presented) The wireless communications device of claim 22, wherein the one or more LMP messages includes an LMP message adapted to inquire whether the remote device desires to establish the UWB link.

26. (Previously Presented) The wireless communications device of claim 22, wherein the one or more LMP messages includes an LMP message adapted to determine whether the remote device is capable of supporting the Bluetooth link and the UWB link.

27. (Original) The wireless communications device of claim 26, wherein the one or more LMP messages includes a packet type table request message.

28. (Currently Amended) A system for establishing a wireless communications link, comprising:

means for discovering by a wireless communicating device (WCD) in an ad hoc network the existence of a remote device within a coverage area through a first short-range communications interface, the first short-range communications interface communicating through a first short-range communications link according to a first short-range communications protocol;

means for determining by ~~the a~~-wireless communicating device (WCD) through ~~the a~~-first short-range communications link ~~of a first type~~ whether ~~the a~~-remote device is capable of supporting communications over a second short-range communications link through a second short-range communications interface, the second short-range communications interface operating according to a second short-range communications protocol; ~~a short-range communications link of a second type; and~~

means for exchanging information by the WCD with the remote device across the first communications link to establish ~~the a~~-second short-range communications link if said determining means determines that the remote device is capable of supporting communications over the second short-range communications link; ~~between the WCD and the remote device wherein the second short-range communications link is of the second type.~~

means for activating the second short-range communications interface to establish the second short-range communications link with the remote device based on the information exchanged across the first short-range communications link, and

means for controlling transmissions of the first and second communication links to operate in a scheduled manner.

29. (Currently Amended) A computer program product, comprising:

a computer useable medium having computer program logic recorded thereon for enabling a processor in ~~a computer system~~ an ad hoc network to establish a wireless communications link, the computer program logic comprising:

program code for enabling the processor to discover the existence of a remote device within a coverage area through a first short-range communications interface, the first short-range communications interface communicating through a first short-range communications link according to a first short-range communications protocol;

program code for enabling the processor to determine through the first short-range communications link whether the remote device is capable of supporting communications over a second short-range communications link through a second short-range communications interface, the second short-range communications interface operating according to a second short-range communications protocol; by a wireless communicating device (WCD) through a first short-range communications link of a first type whether a remote device is capable of supporting a short-range communications link of a second type; and

program code for enabling the processor to exchange information with the remote device across the first communications link to initiate the second short-range communications link if the program code for enabling the processor to determine determines that the remote device is capable of supporting communications over the second short-range communications link; by the WCD with the remote device across the first communications link to establish a

~~second short range communications link between the WCD and the remote device, wherein the second short range communications link is of the second type.~~

program code for enabling the processor to activate the second short-range communications interface to establish the second short-range communications link with the remote device based on the information exchanged across the first short-range communications link, and,

program code for enabling transmission of the first and second communication links to operate in a scheduled manner.